

Proposal Reviews

#229: Occurrence and ecological impact of xenobiotics as potential endocrine disruptors on splittail (*Pogonichthys macrolepidotus*) in the lower Sacramento-San Joaquin River drainage.

US Fish and Wildlife Service

Research and Restoration Technical Panel Review

Delta Regional Review

San Joaquin Regional Review

Sacramento Regional Review

External Scientific Review #1
#2

Prior Performance/Next Phase Funding

Environmental Compliance

Budget

Research and Restoration Technical Panel Review:

CALFED Bay-Delta 2002 ERP PSP Research and Restoration Technical Panel Review Form

Proposal Number: 229

Applicant Organization: US Fish and Wildlife Service

Proposal Title: Occurrence and ecological impact of xenobiotics as potential endocrine disruptors on splittail (*Pogonichthys macrolepidotus*) in the lower Sacramento-San Joaquin River drainage.

Review:

Please provide an overall evaluation summary rating:

Superior: outstanding in all respects;

Above Average: Quality proposal, medium or high regional value, and no significant administrative concerns;

Adequate: No serious deficiencies, no significant regional impediments, and no significant administrative concerns;

Not Recommended: Serious deficiencies, significant regional impediments or significant administrative concerns.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Superior	While the overall concept is very appropriate, the proposal as written is substantially weak in several areas.
-Above average	
-Adequate	
XNot recommended	

1. **Goals and Justification.** Does the proposal present a clear statement of goals, objectives and hypotheses? Does the proposal present a clear justification and conceptual model for the project?

The proposed study will evaluate the impacts of alkylphenol ethoxylates (APE) on a native California fish, the Sacramento splittail (*Pogonichthys macrolepidotus*), by screening male fish for the presence of vitellogenin, an indicator of xenoestrogen exposure. The study is justified based on general concerns about the effects of alkylphenols and related compounds on aquatic life in US waterways, but little specific information on Sacramento/San Joaquin was included to support the need for this study. The proposal would be stronger if the authors had some actual data on levels of alkylphenols in San Joaquin/Sacramento, or at least on the presence of likely sources (sewage outfalls etc.). Another weakness is that the justification for this study is based partly on data from Goodbred et al. 1996 showing estrogen to testosterone ratio declines in carp collected from the lower San Joaquin River. However, that study failed to show any signs of vitellogenin induction in male carp. Additionally, its steroid hormone assessments may not be completely accurate, because it appeared that there were some problems with cross-reactivity in the steroid bioassays,

making it difficult to distinguish between testosterone, which is present in females and a precursor of estradiol 17-beta, and 11-ketotestosterone, the active androgen in male fish, which is not normally present in females. Consequently, these data may not be the best evidence of endocrine disruption in fish from the Sacramento/San Joaquin Estuary.

2. **Likelihood of Success (Approach, Feasibility, Capabilities and Performance Measures).** Is the project likely to succeed based on the approach, feasibility and project team capabilities? Are the proposed performance measures adequate for measuring the project's success?

The level of experimental detail provided is insufficient to rank this proposal as likely to succeed. Numerous problems were noted in the laboratory studies and in the field studies. It was unclear what the female fish would be collected for, if the only aim is to measure Vtg induction in male fish. The link between Vtg induction and reproductive impairment really is not known; this measure only documents exposure to xenoestrogens, and does not provide evidence of meaningful reproductive dysfunction.

There is only a description of the qualifications of one of the three PIs.

3. **Outcomes and Products.** Will the project advance the state of scientific knowledge in general and/or make an important contribution to the state of knowledge of the Bay-Delta Watershed? For restoration proposals, is the project likely to contribute to ecosystem restoration or species recoveries in a significant way? Will the project produce products useful to decision-makers and scientists?

These are simply listed as reports, publications, and presentations. Such products are likely to be outcomes of the project, and would certainly be useful to managers. There should be interpretable outcomes, i.e., splittail are or are not exposed to xenoestrogens in Sacramento/San Joaquin system; concentrations of NP in waters, concentrations associated with vitellogenin induction. One problem could be induction from other chemicals that are not measured; might complicate analysis and interpretation.

4. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

Many portions of the work are not included in the budget breakout.

5. **Regional Review.** How did the regional panel(s) rank the proposal (High, Medium, Low)? Did the regional panel(s) identify significant benefits (regional priorities, linkages with other activities, local involvement) or impediments (local constraints, conflicts with other activities, lack of local involvement) to this proposal? What were they?

This proposal was ranked low by two regions, and medium by another, and many of the concerns were similar.

6. **Administrative Review.** Were there significant concerns about the proposal with regard to the prior performance, environmental compliance and budget administrative reviews? What were they?

Budgetary and environmental compliance reviews each raised issues.

Miscellaneous comments:

None

Delta Regional Review:

Proposal Number: 229

Proposal Title: Occurrence and ecological impact of xenobiotics as potential endocrine disruptors on splittail (*Pogonichthys macrolepidotus*) in the lower Sacramento-San Joaquin River drainage.

Overall Ranking: ☒Low ☐Medium ☐High

Provide a brief summary explanation of the committee's ranking:

Too little information is included in the application to assess the project's feasibility. It lacks local involvement.

1. Is the project feasible based on local constraints?

☐Yes ☒No

How?

The proposal doesn't thoroughly demonstrate the project's feasibility. The timeline is reasonable, but the application doesn't include sufficient information about personnel, facilities, and project management to assure its success.

o Lack of detail in proposal precludes assessment on feasibility. Laboratories at which chemical analyses will be performed and in which the splittail are raised are not identified by name or location. Peer-reviewed publications and presentations at scientific conferences are identified as expected products, but no time line for their presentation is specified nor is the nature of the presentation disclosed. No target characteristics (i.e. size, age, health,, etc.) of the splittail to be captured in field sample efforts are disclosed. The qualifications of two of the three listed applicants is unknown - only the qualifications of Cathy Johnson are identified. The proposal states that the data will be presented in reports and made accessible, but gives no direction on how to access the data or when such access can be made. There is no identification of the persons responsible for the conduct of either the laboratory or field work; it is implicit that Cathy Johnson will either supervise or perform the laboratory chemical analyses but that is not substantiated in the text.

o The time line for the work to be performed seems reasonable.

o No CEQA or NEPA documents will be required to complete the proposal.

2. Does the project pursue the restoration priorities applicable to the region as outlined in the PSP?

☒Yes ☐No

How?

o This proposal is consistent with ERP Draft Stage 1 Delta and Eastside Tributaries Region Restoration Priority # 6 (Restore Delta's shallow water habitats while minimizing contaminants' adverse effects) and with Multi-Region restoration priorities # 5 (Ensure that

restoration isn't threatened by degraded water quality)and 6(Ensure at-risk species' recovery by developing conceptual understanding + models that cross regions).

3. Is the project adequately linked with other restoration activities in the region, such as ongoing implementation projects and regional planning efforts?

XYes -No

How?

o The results of this project could be utilized by regulators to address measures to control endocrine disrupting chemicals if it is found that these contaminants are causing harm to native fish species.

o The results of this project would be of use to fisheries scientists involved in research and/or management of Sacramento splittail and perhaps other native fishes.

4. Does the project adequately involve local people and institutions?

-Yes **X**No

How?

o The proposal indicates that local involvement is currently being evaluated. No public outreach program is identified. There is no indication of public and/or stakeholder sentiments on the proposal, or whether any attempts were made or will be made to solicit such sentiments

Other Comments:

X

San Joaquin Regional Review:

Proposal Number: 229

Applicant Organization: US Fish and Wildlife Service

Proposal Title: Occurrence and ecological impact of xenobiotics as potential endocrine disruptors on splittail (*Pogonichthys macrolepidotus*) in the lower Sacramento-San Joaquin River drainage.

Overall Ranking: -Low **XMedium** -High

Provide a brief summary explanation of the committee's ranking:

The committee ranked this proposal as a medium priority to the San Joaquin region. The committee felt that a greater involvement by local groups and linkage to projects in the San Joaquin region would have made this proposal stronger.

1. Is the project feasible based on local constraints?

XYes -No

How?

Applicant proposal does not require the acquisition or alteration of land or habitat. Techniques for sample acquisition and processing well documented. Access to land will need to be acquired for private property upon receiving the grant. CDFG collecting permits and Section 10 ESA take permits need to be acquired at this time too. Applicant is an employee of the USFWS; thus section 10 permit will be an in-house consultation.

2. Does the project pursue the restoration priorities applicable to the region as outlined in the PSP?

XYes -No

How?

This proposal addresses San Joaquin section #5 (reduction of pesticides and other contaminants), Multi-regional #5 (restoration not limited by degraded water quality), Sacramento region #6 (pesticides/research and pilot/demonstration projects), delta region #6 (restore shallow water habitats in the Delta for the benefit of at-risk species while minimizing potential adverse effects of contaminants), as well as Strategic goals #'s 1,3,and 6 (at-risk species, harvested species, and water and sediment quality).

3. Is the project adequately linked with other restoration activities in the region, such as ongoing implementation projects and regional planning efforts?

XYes -No

How?

Compliments splittail restoration activities. Also provides important toxicology information for the recovery of other fish and vertebrate species that are susceptible to endocrine disruption. However, a stronger linkage with other San Joaquin water quality issues and projects would enhance this proposal.

4. Does the project adequately involve local people and institutions?

XYes -No

How?

Project will involve coordination of research between the USFWS and UC Davis and provides important information about the levels of endocrine disruptors to agencies like DWR and CVRWQCB to issue 303 (d) limits to water bodies. However, proposal would be stronger with more local involvement.

Other Comments:

N/A

Sacramento Regional Review:

Proposal Number: 229

Applicant Organization: US Fish and Wildlife Service

Proposal Title: Occurrence and ecological impact of xenobiotics as potential endocrine disruptors on splittail (*Pogonichthys macrolepidotus*) in the lower Sacramento-San Joaquin River drainage.

Overall Ranking: ☒Low ☐Medium ☐High

Provide a brief summary explanation of the committee's ranking:

This proposal is based on an assumption that needs to be tested and confirmed. See below for comments.

1. Is the project feasible based on local constraints?

☐Yes ☒No

How?

A fundamental assumption in this study is that APE has an effect on splittail. Because the proposal is based on this assumption, the proponents should conduct a pilot study to verify effects of APE on splittail. This confirmation would strengthen the case of studying the effects of APE on the listed species.

2. Does the project pursue the restoration priorities applicable to the region as outlined in the PSP?

☒Yes ☐No

How?

The proposal addresses the PSP Multi Region 5 priority regarding examining the fate and effect of nonylphenol in aquatic environments; it does not specifically address Sacramento Region priorities.

3. Is the project adequately linked with other restoration activities in the region, such as ongoing implementation projects and regional planning efforts?

☐Yes ☒No

How?

Generally speaking, this project complements other splittail monitoring and salmonid projects concerning endocrine disruptors.

4. Does the project adequately involve local people and institutions?

-Yes ☒No

How?

No local involvement has been identified.

Other Comments:

External Scientific: #1

Research and Restoration External Scientific Review Form

Proposal Number: **229**

Applicant Organization: **US Fish and Wildlife Service**

Proposal Title: **Occurrence and ecological impact of xenobiotics as potential endocrine disruptors on splittail (*Pogonichthys macrolepidotus*) in the lower Sacramento-San Joaquin River drainage.**

Conflict of Interest Statements:

I have no financial interest in this proposal.

XCorrect

-Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

None

Review:

Please provide an overall evaluation summary rating:

Excellent: outstanding in all respects;

Good: quality but some deficiencies;

Poor: serious deficiencies.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Excellent	The overall concept is very appropriate, however the proposal as written is lacking in several areas, making it difficult to judge the likelihood of success.
X Good	
-Poor	

1. **Goals.** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

The proposed study will evaluate the impacts of alkylphenol ethoxylates (APE) on a native California fish, the Sacramento splittail (*Pogonichthys macrolepidotus*), by screening male fish for the presence of vitellogenin, an indicator of xenoestrogen exposure. Fish will be collected on the San Joaquin and Sacramento River and North and South sections of the Delta. To assess exposure, water samples from sites where fish were collected will be analyzed for nonylphenol concentrations and confirmed in the laboratory using gas chromatography mass spectrometry. The research is timely because there is concern about the presence of alkylphenols and othere xenoestrogens in Sacramento and San Joaquin River area and their impacts on fish, and because the splittail is a federally protected species. Goals are well-stated and internally consistent, except maybe for full explanation of

metabolism studies and exactly how this would fit into larger goal of identifying exposure to and effects of nonylphenol in splittail.

Rating: Very good

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

The study is justified based on general concerns about the effects of alkylphenols and related compounds on aquatic life in US waterways, but little specific information on Sacramento/San Joaquin was included to support the need for this study. The proposal would be stronger if the authors had some actual data on levels of alkylphenols in San Joaquin/Sacramento, or at least on the presence of likely sources (sewage outfalls etc.). At the same time, though, concentrations of these compounds have not been evaluated very thoroughly in many areas of the US, so would not be surprising if only very limited data were currently available.

Another weakness is that the justification for this study is based partly on data from Goodbred et al. 1996 showing estrogen to testosterone ratio declines in carp collected from the lower San Joaquin River. However, that study failed to show any signs of vitellogenin induction in male carp. Additionally, its steroid hormone assessments may not be completely accurate, because it appeared that there were some problems with cross-reactivity in the steroid bioassays, making it difficult to distinguish between testosterone, which is present in females and a precursor of estradiol 17-beta, and 11-ketotestosterone, the active androgen in male fish, which is not normally present in females. Consequently, these data may not be the best evidence of endocrine disruption in fish from the Sacramento/San Joaquin Estuary.

The proposal has good overview of problems associated with alkylphenols, their estrogenic activities based on other studies in UK, etc. although some of this material is presented in Feasibility section rather than in Justification section.

Rating: Good

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

The approach is basically well-designed and appropriate for meeting the objectives of the project, although some details about how sampling and analyses will be accomplished have been excluded. For example, no reference is given for the method that will be used to extract nonylphenol from water samples. Also, the investigators propose to use an ELISA to measure vitellogenin in splittail. However, a species-specific assay has not been developed for splittail, and the investigators do not provide any evidence that commercially available assays will be reliable for this species. This isn't likely to be a major obstacle, but it would strengthen the proposal to have some of this information already on hand. They also propose to measure nonylphenol in the water column by ELISA. Recently, these types of assays have been developed (e.g., see Franken et al. 2001) but may not be widely available. Investigators do not cite any references to development of these assays.

The number of fish to be sampled is small, presumably because this is a listed species. Not clear the reason for collecting female fish. Is the meaning that 10 fish will be collected, they cant necessarily be sexed, although preferred target is males?

Also they describe how laboratory-exposed fish will be analyzed for uptake and metabolism of nonylphenol, but dont give supporting methodology references on techniques. Also proposal is to measure excreted products in reaction chamber, presumably whats in urine and feces. Look for metabolites in bile? They have been found there also in other studies. Maybe should give some additional supporting references and descriptions of same types of studies in other species. What is exactly the objective of controlled exposure studies?

Proposal mentions metabolism studies to be conducted in first year and then laboratory exposure and fate studies to be conducted later, but doesnt clearly describe the difference between these.

Also state that data will be analyzed statistically using Canonical Correspondence Analysis (CCA) and Canonical Correlation Analysis (CANCOR). However, it isnt clear why these multivariate analyses are needed, since the only endpoints mentioned to be measured in the field are fish plasma vitellogenin levels and water NP levels. What other data would be collected that would necessitate canonical correlation analysis?

The study should generate relevant information that will be useful to resource managers. It will provide the resource agencies, regulators, researchers and environmental groups with scientific data on exposure of a federally protected species to estrogenic surfactants, and this data can be used to improve protection of the species both on public lands and private. Further, this information should improve resource agencies' ability to confidently state threshold limits as they may apply to dischargers

Rating: Good

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

The approach is technically feasible, although it could be more fully documented by the investigators. They do not provide a lot of detail or methods references for some of the analyses they plan to conduct (see above), but the techniques are available and they could probably apply them successfully without great difficulty. The likelihood of success is high; the survey should at least provide good information on extent to which splittail are exposed to xenoestrogens. The scale of the project is consistent with objectives and would be within scope of the authors, especially assuming the support of the toxicology department at UC Davis as well as USFWS.

However, the section on feasibility in the proposal itself doesnt address this question so much as it addresses justification (e.g., that nonylphenol is widespread and can be toxic to aquatic organisms and have estrogenic activity). This section should include more information on the technical details of how the study will be carried out, the availability of equipment and facilities to do the work, etc.

Rating: Fair

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

These are included, but without much detail; essentially they are successful measurement of endpoints laid out in the study design, i.e. concentrations of APEs in the Sacramento and San Joaquin river; vitellogenin in male splittail blood; and metabolic fate of nonylphenol in Sacramento splittail.

Rating: Good

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

These are simply listed as reports, publications, and presentations. Such products are likely to be outcomes of the project, and would certainly be useful to managers. There should be interpretable outcomes, i.e. splittail are or are not exposed to xenoestrogens in Sacramento/San Joaquin system; concentrations of NP in waters, concentrations associated with vitellogenin induction. One problem could be induction from other chemicals that are not measured; might complicate analysis and interpretation.

Rating: Very good

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

The primary investigator is a Ph.D. student who has worked for USFWS for several years and has experience in tissue residue chemistry. It is not clear that she has published in this particular field, as the section on investigator qualifications doesn't include any publications. It is likely that she and her collaborators would be capable of carrying out the project successfully with UC Davis and USFWS support, but the level of certainty is not as high as it would be for a more experienced investigator. No information is provided on the qualifications of other investigators. Furthermore, there is very little description of the laboratory facilities available for doing the analyses of included in this project.

Rating: Good

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

The budget seems reasonable for work proposed, but the budget justification only includes time for doing vitellogenin analyses (about 4 weeks, which is reasonable) and says nothing about analyses of water, sediments, tissues for NP, nothing about set up of laboratory metabolism, exposure, and fate experiments.

Rating: Fair

Miscellaneous comments:

External Scientific: #2

Research and Restoration External Scientific Review Form

Proposal Number: **229**

Applicant Organization: **US Fish and Wildlife Service**

Proposal Title: **Occurrence and ecological impact of xenobiotics as potential endocrine disruptors on splittail (*Pogonichthys macrolepidotus*) in the lower Sacramento-San Joaquin River drainage.**

Conflict of Interest Statements:

I have no financial interest in this proposal.

XCorrect

-Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

None

Review:

Please provide an overall evaluation summary rating:

Excellent: outstanding in all respects;

Good: quality but some deficiencies;

Poor: serious deficiencies.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Excellent	This proposal is too narrow in its focus. The methods are not described in nearly enough detail and interpretation of vitellogenin concentration as far as the ecology of populations of splittail is highly questionable. It is unclear how the field and laboratory components of the project fit together.
-Good	
XPoor	

1. **Goals.** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

The goal of this project is to analytically quantify and evaluate the degree to which alkylphenol ethoxylates such as nonylphenol impact the Sacramento splittail (*Pogonichthys macrolepidotus*) which is a federally protected species. The project is very narrow in its focus on nonylphenol and splittail. There are no clearly articulated hypotheses and the objectives are not entirely internally consistent (see comments on Approach).

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

No. Given the likely complexity of chemicals to which native fish populations are exposed the project is too narrow in its focus on nonylphenol. The likelihood that nonylphenol is primarily responsible for the decline in splittail populations, as implied in the proposal, is low.

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

The approach involves a combination of field surveys of vitellogenin in the blood of male splittails as well as laboratory studies. Field sampling will take place on the San Joaquin and Sacramento River and north and south sections of the Delta. The laboratory studies will examine uptake and metabolism of radiolabelled nonylphenol during exposure to nontoxic concentrations for a period of 24 h.

It is not clear how the laboratory results will answer the question whether nonylphenol are having ecological impacts on splittail. First of all the exposure period is very short and second there is no attempt to relate vitellogenin concentration to any measure of reproductive impairment or development. In the abstract it is stated that male fish vitellogenin will be measured, but later it is stated that a maximum of 10 male and 10 female fish will be collected from each site. What will the females be used for?

In several places the applicants write that they will study 'alkyl phenolic ethoxylates such as nonylphenol'. In fact it appears that they are focussing very specifically on nonylphenol alone.

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

The vitellogenin methods are documented and can probably be measured satisfactorily. There are no details provided on sampling or choice of field sites or even how many field sites will be sampled. The milestones for the project are only very superficially described.

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

Performance measures are not described other than to state very briefly what the applicants plan to measure.

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

Not as far as I can see.

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

There is only a description of the PI (out of the three applicants listed on p. 1). The PI is a Ph.D. student and there is little indication in the proposal of a proven track record.

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

This 3 year project has a total budget of \$475,312.

Miscellaneous comments:

None

Prior Performance/Next Phase Funding:

New Proposal Number: 229

New Proposal Title: Occurrence and ecological impact of xenobiotics as potential endocrine disruptors on splittail (*Pogonichthys macrolepidotus*) in the lower Sacramento-San Joaquin River drainage.

1. Prior CALFED project numbers, titles, and programs: *(list only projects for which you are the contract manager)*

CALFED #99-B06, USBR #99-FC-20-0241 - San Jose State University Foundation - Assessment of Ecological and Human Health Impacts of Mercury in the Bay-Delta Watershed

2. Prior CVPIA project numbers, titles, and programs: *(list only projects for which you are the contract manager)*

N/A

3. Have negotiations about contracts or contract amendments with this applicant proceeded smoothly, without persistent difficulties related to standard contract terms and conditions?

-Yes -No **X**N/A

If no, please explain any difficulties:

4. Are the status, progress, and accomplishments of the applicant's current CALFED or CVPIA project(s) accurately stated?

-Yes -No **X**N/A

If no, please explain any inaccuracies:

5. Is the applicant's progress towards these project(s)' milestones and outcomes to date satisfactory?

-Yes -No **X**N/A

If no, please explain deficiencies:

6. Is the applicant's reporting, records keeping, and financial management of these projects satisfactory?

-Yes -No **X**N/A

If no, please explain deficiencies:

7. Will the project(s) be ready for next phase funding in 2002, based on its current progress and expenditure rates?

-Yes -No **X**N/A

If no, please explain:

Other Comments:

While I administer CALFED Agreement 99-B06 with the San Jose State University Foundation, I have no direct knowledge of FWSs performance on that project.

Environmental Compliance:

Proposal Number: 229

Applicant Organization: US Fish and Wildlife Service

Proposal Title: Occurrence and ecological impact of xenobiotics as potential endocrine disruptors on splittail (*Pogonichthys macrolepidotus*) in the lower Sacramento-San Joaquin River drainage.

1. Are the legal or regulatory issues that affect the proposal identified adequately in the proposal?

-Yes **X**No

If no, please explain:

NEPA documentation required with FESA permit.

2. Does the project's timeline and budget reflect adequate planning to address legal and regulatory issues that affect the proposal?

-Yes **X**No

If no, please explain:

No funds or time are specified for environmental compliance.

3. Do the legal and regulatory issues that affect the proposal significantly impair the project's feasibility?

-Yes **X**No

If yes, please explain:

Other Comments:

Budget:

Proposal Number: 229

Applicant Organization: US Fish and Wildlife Service

Proposal Title: Occurrence and ecological impact of xenobiotics as potential endocrine disruptors on splittail (*Pogonichthys macrolepidotus*) in the lower Sacramento-San Joaquin River drainage.

1. Does the proposal include a detailed budget for each year of requested support?

☒Yes ☐No

If no, please explain:

2. Does the proposal include a detailed budget for each task identified?

☒Yes ☐No

If no, please explain:

3. Does the proposal clearly state the type of expenses encompassed in indirect rates or overhead costs?

☐Yes ☒No

If no, please explain:

Biologist rate includes OH for which no component expense costs are detailed.

4. Are appropriate project management costs clearly identified?

☐Yes ☒No

If no, please explain:

PM costs are not a segregated cost, but rather part of the biologist's hourly rate. PM tasks are not specifically enumerated.

5. Do the total funds requested (Form I, Question 17A) equal the combined total annual costs in the budget summary?

☒Yes ☐No

If no, please explain (for example, are costs to be reimbursed by cost share funds included in the budget summary).

6. Does the budget justification adequately explain major expenses?

☒Yes -No

If no, please explain:

7. Are there other budget issues that warrant consideration?

☒Yes -No

If yes, please explain:

Benefit costs are not disclosed.

Other Comments: